BSTA 656
Longitudinal Data Analysis
Fall 2, 2021

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Hours  Class – Monday and Wednesday, 10:15am-11:45am, Blockley 245

Evaluation  Homework: 60%
Take-home final exam: 40%


Topics

1. Linear Mixed Models for Correlated Data
   LMM; MLEs; Fixed effects; Random effects; BLUPs; EM; Restricted MLEs (REMLs); Variance components;

2. Generalized Linear Models and Quasi-likelihood
   Exponential family; Mean-variance relationship; Link functions; MLEs; Weighted least squares; Hypothesis testing; Over-dispersion; Estimating equations; Quasi-likelihood Functions.

   GEE; Robust covariance estimation; Hypothesis Testing in GEE;

4. Generalized Linear Mixed Models
   Relationship between GEEs and GLMMs; Likelihood; Approximate inference (PQL); MLEs; EM; Conditional inference.